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AUTHOR Barnetson, Bob
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ABSTRACT

This paper provides an overview of the performance indicator-based accountability and funding mechanism implemented in the higher education system of Alberta, Canada. The paper defines the terms accountability and regulation, examines the use of performance indicators to demonstrate accountability, and explains how performance indicator-based accountability and regulatory mechanisms are used as policy instruments. The paper also discusses traditional approaches to resource allocation and recent developments in resource allocation, including performance-based funding. The paper outlines the pressures placed on governments by globalization, the right-wing political ideologies that give these pressures political voices, the resultant change in the role of government, and the development of academic capitalism. The paper notes that government policy has induced academic capitalism in Alberta's higher education system and describes Alberta's performance-based funding mechanism. The paper concludes by outlining some criticisms of the performance indicators used in Alberta's funding mechanism and discussing the implications of the performance-based funding mechanism in the province. (Contains 85 references.) (MDM)

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Bob Barnetson
Research and Communications Officer
Alberta Colleges & Institutes Faculties Association
#412 10357 109th Street, Edmonton Alberta T5J 1N3
voice (780) 423-4440 Fax (780) 423-4515
email: barnetsonb@acifa.gmcc.ab.ca

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1. Introduction

Like many jurisdictions, Alberta (Canada) has implemented a performance indicator-based accountability and funding mechanism in its higher education system. Sections 2, 3 and 4 provide an introduction to the use of PI-based mechanisms for accountability and regulatory purposes and situate them in the broader policy environment. Sections 5 and 6 discuss and assess Alberta's performance-based funding mechanisms.

2. Accountability, regulation and performance indicators in higher education

This section outlines how performance indicators (PIs) are related to accountability and regulation. Section 2.1 defines accountability and regulation. Section 2.2 examines the use of performance indicators to demonstrate accountability. Section 2.3 explains how performance indicator-based accountability and regulatory mechanisms act as policy instruments. Subsequently, Section 3 discusses how accountability reports are linked to funding to create *de facto* regulation.

2.1 Accountability and regulation

Accountability is that which is exchanged for autonomy in an authority relationship (McDonnell, 1994; Neave, 1980). Being *accountable* entails providing a report of one's performance and being responsible for that performance (Wagner, 1989; Ewell, 1987). To be held accountable, one must be *causally responsible* (i.e., one's performance must result from an act committed or omitted) and one must be *expectationally responsible* (i.e., one's performance must be judged against a reasonable standard in light of one's mission and circumstances). Those to whom one is accountable must possess *authority* (i.e., have a valid interest in one's performance and the right to judge it), the origins of which may be contractual, statutory or moral (Neave, 1982). *Autonomy* is the freedom to act and can be *substantive* (i.e., having the freedom to pursue academic matters without interference) or *procedural* (i.e., having the freedom to establish administrative, budgetary and operational policy and procedures). Kells (1992) outlines three approaches to accountability:

1. *Goal achievement*—focuses on comparing internally set goals with outputs or outcomes.
2. *Process and environment*—focuses on institution's internal environment or processes.
3. *Compliance with standards*—focuses upon comparing outcomes with externally set standards.

The growing trend towards basing resource allocation upon accountability data results in regulation (Kells, 1992). *Regulation* involves examining a performance and acting to maintain or change it. Regulatory mechanisms are also being linked with other policies in a mutually reinforcing manner to advance a broader agenda that is outlined in Section 4 (Cilbulka and Derlin, 1998).

2.2 Performance indicators as evaluative tools

Demonstrating accountability entails evaluation. Because direct evaluation may be intrusive and costly (as well as potentially affecting the performance being evaluated), evaluation often occurs by proxy (Banta,

1993). In these cases, characteristics, events and (most commonly) outcomes that are believed correlated with the desired performance are used as performance indicators. Cave, Hanney, Henkel and Kogan (1997) classify indicators as simple (neutral descriptions), general (data unrelated to goals), and performance (possessing a point of reference for comparison). Numeric performance indicators dominate government introduced accountability mechanisms and operationalize concepts such as quality by specifying measurable evidence of goal completion (Dochy, Segers and Wijnen, 1990; Jones, 1982). As evaluative tools, PIs require goal agreement (Richardson, 1994; Wagner, 19889). Because PIs measure institutional performance, institutions must be able to affect their PI scores (Sizer, Spee and Bormans, 1992). Kaufmann (1988) identifies five organizational elements to which indicators can be applied:

1. *Inputs* are raw materials (e.g., resources, policies, communal characteristics).
2. *Processes* are the ways inputs become products, outputs and outcomes (e.g., teaching, learning).
3. *Products* are results that are fed back into the system to become outputs and outcomes (e.g., courses that eventually result in degrees awarded).
4. *Outputs* are the aggregate products of a system (e.g., degrees awarded, papers published).
5. *Outcomes* are the effects of outputs in society (e.g., employment rates, life expectancy, democracy).

Kaufmann views organizational success in terms of goal attainment and, therefore, inputs and processes are means by which to create products, outputs and outcomes. Performance indicators have several uses:

1. *Informing higher education planning*. Accountability systems defined by institutional governors tend to be closely tied to planning (Ruppert, 1995). Tracking and projecting trends can provide the warning and information necessary to plan effective interventions and improve efficiency in order to properly steward the public's investment (Nedwek and Neal, 1994). This is highly dependent on identifying patterns of change and leading indicators (Freeman, 1995).
2. *Improving higher education practice*. Determining relationships between inputs, process and outputs increases both educators' understanding of their work and the quality of educational products, outputs and outcomes (Sizer et al., 1992). The complexity of social systems may impede accurate causal modeling (Ewell and Jones, 1994).
3. *Monitoring the outcomes of higher education*. Reporting on the contribution of higher education to identifiable outcomes emphasizes the return on investment (Banta, Rudolph, Van Dyke and Carter, 1996). This application of PIs informs consumer choices (Cave et al., 1997).

Pollster and Newson (1998) criticize PIs as conceptual technologies that facilitate the entry of non-academic agendas into higher education. Peters (1992a) notes that using PIs involves judgment in selecting indicators and setting reference points and, therefore, PIs are not a value-neutral technology. By making

visible the most and least effective work of academics (based upon a cost-benefit analysis), PIs make it possible to differentially reward faculty such that accountability becomes regulation.

PIs are subject to a host of technical criticisms as well. PIs are drawn from industrial input-output analysis (Emberley, 1996). This approach assumes that inputs are uniform and passive and that outputs are standardized thus making possible comparisons to find the best (i.e., maximally effective and efficient) way to transform inputs into outputs. If inputs and outputs are variable, then a common metric by which to measure is necessary to make valid comparisons between processes. Education provides neither uniform inputs and outputs nor common metrics. Students and instructors (i.e., inputs) are neither passive nor uniform. Graduates (i.e., outputs) are also unique in the degree to which their knowledge, skills and attitudes can be developed and for what ends and manifest themselves over an extended period of time. The process (involving introspection, synthesis and integration) is similarly variable according to students' experiences, aptitudes and motivation and is thus resistant to the imposition of a common metric. Nedwek and Neal (1994) argue that the pervasion of an input-output (i.e., mechanistic) model of education neither fully models the educational process nor captures all educational outcomes. Also of concern is that PIs are conceptually better suited to measuring economic outcomes; adopting this approach conceptually closes the door to measuring social and cultural outcomes which are generally measured qualitatively.

2.3 Accountability mechanisms as policy instruments

Accountability mechanisms are policy instruments in that they translate policy goals into actions by propelling individuals to act when otherwise they could not or would not. Four types of instruments emerge from the literature (McDonnell, 1994; Schneider and Ingram 1990):

1. *Authority-based* instruments grant permission, require action or change the distribution of authority.
2. *Incentive-based* instruments use inducements, sanctions, charges or force to encourage action.
3. *Capacity-building* instruments invest in intellectual, material or human resources to enable action.
4. *Hortatory* instruments signal goals are of high priority to propel action.

Incentive-based instruments are generally short-term and designed to attain specific objectives while capacity-building instruments are generally long-term and designed to create the potential for gains. Hybrid mechanisms (e.g., combining incentive and authority components) may increase instruments' effectiveness.

3. Resource allocation and regulation

Allocating resources based upon accountability data creates *de facto* regulation. Section 3.1 outlines traditional approaches to resource allocation. Recent developments in resource allocation such as performance-based funding are outlined in Section 3.2. Subsequently, Section 4 outlines the broader policy agenda that is driving the use of performance indicator-based accountability and regulatory mechanisms.

3.1 Traditional approaches to resource allocation

Linking resource allocation to funding creates regulation. Institutional funding has traditionally been distributed on an incremental or formula basis (Massy, 1996; Caruthers, Marks and Walker, 1994). *Incremental budgeting* changes basic operating and capital budgets annually (Layzell and Caruthers, 1995; Epper, 1994). This perpetuates resource distribution patterns and is criticized as irrational as well as encouraging budget maximizing behaviour by bureaucrats (McKenzie, 1997; Osbourne and Gaebler, 1992). *Formula-based budgeting* ties allocations to specific criteria (e.g., $6200 per full-time equivalent student) and is designed to ensure funding adequacy, equity and stability (Elmore, Abelmann and Fuhrman, 1996; Caruthers et al., 1994). Critics believe formula funding creates inter-institutional competition for the basis of allocations (e.g., students, programs, physical plants, etc.) but provides no incentive for institutions to improve functioning (Albright and Gilleland, 1994; Sells, 1994). Both incremental and formula funding delegate allocation decisions to institutional governors.

3.2 Recent developments in resource allocation

Performance-based and incentive funding are new methods of resource allocation. *Performance-based funding* sets measurable outcomes, ties future funding to outcome attainment and thereby introduces market-like competition between institutions that is structured by government (Serban, 1997; Layzell and Caruthers, 1995; Peterson, Erwin and Wilson, 1977). *Incentive funding* makes available additional funds contingent upon institutions engaging in specific activity (Epper, 1994). The structure and criterion of incentive and performance-based funding allow governments (rather than institutions) to operationalize concepts such as quality and impose agreement on values and purposes (Holland and Berdahl, 1990; Carter, 1989). Performance and incentive funding tend to function on the edges of, or in addition to, base allocations because substantial planning difficulties and intense inter-institutional competition result from large annual redistributions (Ashworth, 1994). Allocations must be large enough to garner credibility from legislators, the public and institutions (Banta, 1993). Underlying these approaches is the belief that institutions should and must be forced to re-examine basic spending patterns (Epper, 1994) and that altering institutional spending patterns is desirable (Massy and Hulfactor, 1993; Brown and Wolf, 1993). This ignores that funding patterns represent negotiated solutions that ensure multiple and often-conflicting objectives are achieved (Caruthers et al., 1994; Carter, 1989).

Fully appreciating the implications of the growing use of PIs and performance-based funding mechanisms (PBFMs) requires an understanding of the broad structural changes occurring within Canadian society. Section 4 outlines the effect of economic globalization and right-wing political ideologies on the role of government and its approach to higher education.

4. Academic capitalism and the evaluative state

The growing use of PIs to drive regulatory mechanisms is part of a policy agenda to align higher education with market needs. Section 4.1 outlines the pressures placed on governments by economic globalization. Section 4.2 outlines the right-wing political ideologies that give these pressures political voice. Section 4.3 outlines the resultant change in the role of government. In higher education, this has induced academic capitalism as outlined in Section 4.4. Subsequently, Section 5 outlines Alberta's use of a performance indicator-based accountability and regulatory mechanism.

4.1 Economic globalization

The *globalization thesis* posits that maintaining economic stability requires governments to attract investment capital and that the new, transnational nature of capital pressures governments to reduce tax-funded public services so as to increase investors' returns (Castles, 1996). Teeple (1995) explains the Keynesian Welfare State (KWS) as a result of capitalists' need for social reform to maintain production. Capitalism's tendency to increase economic disparity is symptomatic of a fundamental conflict between democracy and capitalism: as a distributive system for social goods, democracy's distributive criteria are citizenship while capitalism's distributive criteria are the ability to pay. The KWS's large public sector mitigates this crisis tendency (Jessop, 1993). Transnational capital no longer requires KWS reforms because the interests of nation-states and corporations have been uncoupled: if production falters, capital relocates (Greider, 1997). The role of the state becomes to adjust domestic economies to meet the needs of globalization (Dominelli and Hoogvelt, 1996).

Dudley (1998; Brown and Lauder, 1996) categorize educational policy responses to globalization as a neo-Fordist or post-Fordist. A *neo-Fordist* approach emphasizes labour-market flexibility as a means to reduce production costs and increase competitiveness. Efficiency is sought through deregulation, managerialism and privatization. Higher education is focused on meeting the training demands of industry (Neave, 1980). The *post-Fordist* approach emphasizes developing a highly and multi-skilled workforce to stimulate and attract high wage jobs. The state's role is to develop human capital and guide growth through targeted investments (Newson, 1994). The adoption of a neo-Fordist approach in Alberta reflects a political compromise bridging an ideological division within the Progressive Conservative Party.

4.2 Ideologies and the rightist alliance

Ideologies are collections of assumptions, values and expectations used to make sense of the world and guide beliefs about economic production and distribution (Dolbeare and Medcalf, 1988). *Liberalism* dominates Canadian politics and assumes that self-interest motivates individuals and rewards reflect merit (Gibbins and Youngman, 1996). *Classical Liberalism* emphasizes negative freedom (i.e., equality of right and freedom from constraint) while *Reform Liberalism* emphasizes positive freedom (i.e., equality of opportunity and freedom to act). Teeple (1995) attributes the decline of the KWS's Reform Liberalism to

economic stagnation, growing business influence due to globalization and a backlash against social change. This has opened the door for a resurgence of Classical Liberalism as well as the emergence of Neoliberalism, Neoconservatism and the New Right.

Neoliberals describe themselves as pragmatic and use incentives, assistance and infrastructure improvement to generate prosperity and help the disadvantaged increase their self-sufficiency (Pratt, 1998; Gibbins and Youngman, 1996). *Neoconservatives* are reacting against growing egalitarianism (which threatens order and authority), desire a more authoritative state and oppose government attempts to achieve greater social equality. The *New Right* is a populist movement—combining religious fundamentalists and the disaffected lower middle class—that desires radical minimize government and advanced traditional values. Apple (1998) posits an alliance among Neoliberals, Neoconservatives, Classical Liberals and the New Right that uses the market to determine what and how much is produced, how production is organized and how goods are distributed (Fellows, Flanagan, Shedd and Waud, 1993). Within this alliance is substantial disagreement regarding social change and the role of government. Neoliberals and Classical Liberals advocate the use of markets to generate social change instead of state intervention. This conflicts with the Neoconservative and New Right belief that an authoritative state is necessary to arrest societal, moral degeneration. This conflict has given rise to the evaluative state.

4.3 The evaluative state and accountability mechanisms

The evaluative state (also called contract government) devolves goal attainment responsibility to individuals and institutions while government retains control of resource allocation (Neave, 1988). Traditionally, governments set goals and then allocated resources. Evaluation was *a priori* in that it assumed goal attainment would occur because resources were provided (Elmore, 1979/80). This approach corresponds with incremental and formula-based budgeting. The evaluative state relies on *a posteriori* evaluation: resources are allocated based upon prior performance to encourage goal attainment. This approach is consistent with incentive and performance-based funding and recognizes that policymakers may be better able to control implementation through outcomes assessment. The evaluative state allows government to: create a market-like environment with quasi-independent agencies; measure their outputs; and tie the value of outputs to rewards. Accountability mechanisms are necessary in the market-like environment to prevent dishonesty motivated by the pursuit of maximal personal utility. The measurement of performance to evaluate outcomes, increase productivity and provide consumer information naturally flows from the market-based approach (Peters, 1992b). The market-like insulates government from direct responsibility for inequitable outcomes: outcomes stem from the actions of independent agencies and the impersonal forces of the market. In higher education, the evaluative state has induced academic capitalism.

4.4 The emergence of academic capitalism

The emergence of an evaluative state in response to economic and ideological pressures has induced academic capitalism in higher education. *Academic capitalism* exists when institutions and faculty members engage in market (i.e., for profit activities) and market-like (i.e., competing for funding) behaviours such as seeking grants, launching spin-off companies, building endowments, raising tuition and entering into business-education partnerships (Slaughter and Leslie, 1997).

Resource dependence theory says that organizations depend upon their environment for key resources and organizational behaviour is a response to the actions of external agents who control organizational resources (Pfeffer and Salancik, 1978; Pfeffer, 1992). Substantial changes in resource availability destabilize organizations and result in organizational adaptation to ensure survival. Making three changes to higher education funding (Slaughter and Leslie, 1997; Newson, 1994; Buchbinder and Newson, 1990) has induced academic capitalism:

1. decreasing public transfers of undesignated (i.e., block) funding;
2. increasing use by government of designated funding (i.e., funding requiring of institutions specific performances); and
3. increasing reliance on external funders who (naturally) stipulate the use of their funds.

Decreasing the amount of undesignated public funding forces institutions to seek new (generally non-governmental) sources of funding and, therefore align their activities with the needs of the market. Further, increasing the use of designated funding allows governments and private funders to direct research, curricular and administrative decisions (Furstenbach, 1993). Together, these changes decrease institutional autonomy by encouraging a growing alignment between the needs of the market and the activities of post-secondary institutions. Accountability and regulatory mechanisms are part of the growing trend towards using designated funding "envelopes". Accountability mechanisms are also used to legitimate the introduction of academic capitalism. Specifically, they:

- focus attention on outputs and outcomes thereby shifting attention to operational issues and away from the impact of policy decisions on equity;
- legitimate the introduction of market behaviour to academe by imposing the exchange relationship of the market economy on higher education
- offload responsibility onto institutions for delivering services while government has a solely evaluative role;
- reinforce the market dynamic by tying funding to performance, thereby intensifying the market forces institutions are already subjected to; and

- focus attention on easily quantifiable aspects of education such as efficiency while ignoring more difficult to quantify aspects such as quality.

The introduction of academic capitalism has a number of implications for higher education systems. Perhaps most importantly, realigning higher education's activities to meet market needs allow capitalists (i.e., employers and investors) to present their interests as the interests of society (Harvey and Knight, 1996). This harnesses higher education to serve the needs of the wealthy and perpetuates the economic disparities generated by market systems. There are other implications of academic capitalism, some of which reinforce this shift in power and control:

- Institutional activities become externally driven as fiscal pressure requires administrators to be more attentive to the needs of governments and business.
- New resource allocation structures, including greater sophistication and competitive bidding, change the degree of control exercised by institutions over internal activities.
- Documentary decision-making (e.g., PBFMs) begins to usurp the role of orally contested decision-making through Boards of Governors and academic councils. This transfers power to those who construct and operate documentary systems.
- The greatest barrier to having market-oriented institutions is the long-term employment arrangements institutions have with their academic staff. Greater reliance on part-time and limited-term instructional staff increases institutions' ability to meet the needs of the market.
- The commodification of education results in students acting increasingly like consumers. This threatened the delicate balance higher education maintains between its service and coercive mandates. As institutions increasingly cater to students' desires, the credibility of credentials—the value of which lie in their certification that students are familiar with and competent in the canon and methods of a field—may suffer.

Newson (1994) notes that the belief that institutions will survive the introduction of academic capitalism and be increasingly able to insulate core areas through market activity is difficult to substantiate. Reductions in government funding more than offset additional corporate funding and corporate funding comes with many strings attached. Institutions are not free agents entering into exchange relationships because they are resource poor. Partnerships with corporations requires increasing managerialism which in turn increased the influence of external groups over teaching and research. This alters the knowledge creation purpose (towards profit), process (towards consumption) and values (towards market-based).

5. Accountability and performance-based funding in Alberta

This component of the paper outlines the introduction of Alberta's performance indicator-based accountability and funding mechanism. Section 5.1 outlines how government policy has induced academic

capitalism in Alberta's higher education system. Section 5.2 describes Alberta's performance-based funding mechanism (PBFM). Subsequently, Section 6 presents an analysis of the mechanism, its implications for educators and some speculation as to its future development.

5.1 Academic capitalism in Alberta's higher education system

Alberta's public higher education system enrolls approximately 123,000 students in 4 universities, 2 technical institutes, 15 colleges and 4 religiously affiliated, not-for-profit university colleges (AECD, 1998a). Government funding of approximately $788 million was delivered in 1998 through the Department of Advanced Education and Career Development in two ways. A base grant (a combination of operating grants fixed at 1991/92 levels and capital funds fixed at 1986/87 levels) is provided each year. A series of funding envelopes were introduced in 1994 and allocated funding on a competitive basis to encourage institutions to achieve government goals (Treasury, 1998). Institutions must generate and submit for approval three-year business plans and annual reports.

The White Paper *New directions for adult learning in Alberta* (AECD, 1994) signaled the official introduction of academic capitalism to Alberta's higher education system (Barnetson, 1999a). While *New directions* noted that "(t)he adult learning system exists to serve the social, cultural and economic goals of the learner and the community" (AECD, 1994, p.7), its policy initiatives focus on increasing the alignment of the higher education system with the market by continuing to lower per-student government expenditures and eroding institutional autonomy.

The three-year 21% reduction to institutional base grants that began in 1994 continued a long-term decline in public funding (AECD, 1994). When the 21% reduction is combined with rising enrollments and sluggish funding growth through the 1980s, per-student, real dollar (1997=100) government grant-based revenue has fallen from $14,551 in 1982/83 to $7968 in 1997/98—a reduction of 45.3% over 15 years (Shillington, 1998). Although tuition has increased, the decline in tuition- and grant-based revenue still totals 37%. Additional pressure will be exerted on Alberta's higher education system by an expected increase in enrollment between 23,000 and 37,000 students between 1997 and 2005 (AECD, 1997a). Although some additional funding has been committed to manage this growth, projections suggest that per-student funding levels will continue to decline (ACIFA and CAFA, 1998). This pressures institutions to enter into partnerships with the private sector and thereby surrender some of their autonomy.

The introduction of funding envelopes as further erodes autonomy by allowing government to stipulate goals. Institutions' proposals or performances are compared to criteria and allocations are made on a competitive basis. Envelope funding is projected to increase from 5% of government transfers to institutions in 1996/97 to 17% in 2000/01. Each funding envelope is designed to elicit or encourage a specific performance from institutions and that performance is in addition to their existing mandate. These

envelopes serve to align institutional activities with market needs by demanding public-private partnerships, and by favouring market-proximate disciplines (Barnetson, 1999a). The Performance Envelope mandated the creation of a performance-based funding mechanism (PBFM) which is described below.

5.2 Alberta's Performance Envelope and Performance-based Funding Mechanism

New directions mandated the creation of an accountability reporting framework to outline the outputs and outcomes of Alberta's higher education system (AECD, 1994). Criticism of existing accountability mechanisms included a focus on inputs and processes, a lack of systematic use, and inconsistent data definitions that impede inter-institutional comparisons (AECD, 1995a). A series of 76 PIs were developed in consultation with institutions (AECD, 1996a, 1996b). A second White Paper-mandated goal was the creation of "a new funding mechanism that rewards an institution's performance in providing accessibility, quality and relevance" (AECD, 1994a, p. 15). This resulted in the development of a performance-based funding mechanism to distribute $15 million annually from the Performance Envelope.

The PBFM is driven by nine of the framework's 76 indicators (AECD, 1997b): five indicators are used by all institutions (the learning component) while four indicators are for research universities only (the research component). A two-year pilot of the mechanism began in 1996/97 with the first performance awards announced in July, 1997. The performance awards are partly funded by a 0.5% clawback from institution's base grants as well as by $15 million in new government funding each year. A review of the mechanism is pending but government budget documents suggests that in 2000/01, there will be no new money added to the Performance Envelope although the value of performance awards will increase (Treasury, 1999; AECD, 1999). This indicates that the project will begin redistributing funding within the (closed) system.

The PBFM takes an institution's numeric score on an indicator (e.g., percentage of graduates employed) and plots it on a linear scale (e.g., 0-100%). Benchmarks divide the scale into a series of performance corridors (e.g., 60-69%, 70-79%, 80-89%, >89%); all institutions falling within a corridor are assigned the same number of points for that indicator. The points assigned for performance on each of the five learning component indicators are tallied and that score constitutes overall performance for funding award (AECD, 1996c). Research universities engage in a similar process with the research component indicators. University research results are weighted based upon the amount of institutional funding that is directed to research. The structure of all of the indicators is outlined in Tables 6.1 and 6.2.

Each institution's data is drawn from its four largest programs (AECD, 1996c). The level of aggregation at which performance indicators are compared reflects a compromise. Comparing performance at the level of program (e.g., undergraduate political science programs) is problematic because of small sample sizes,

variations in program methods and nature of programs, and annual variations (AECD, 1996d). Comparing clusters of programs (e.g., all undergraduates arts and science programs) eliminates these concerns at the

Table 6.1 Learning component indicators

Employment rate: Percentage of graduate-survey respondents employed within a specified period following program completion.

Points:	0	15	20	25	30
Benchmarks:	60%	70%	80%	90%	

Graduate satisfaction with overall quality: Percentage of graduate-survey respondents fully/somewhat satisfied with overall educational quality.

Points:	0	15	20	25	30
Benchmarks:	70%	80%	90%	95%	

Credit FLE: Percentage change in full-load equivalent enrollment from one period to the next.

Points:		0	20	25	30
Benchmarks:	Urban	-2%	0%	+4%	
	Rural	-5%	0%	+4%	

Administrative expenditures: Administration as a percentage of total expenditures less ancillary expenditures.

Points:		0	3	4	5
Benchmarks:	> 3500 students	11%	7%	5%	
	≤ 3500 students	12%	8%	6%	

Enterprise revenue: Revenues less all government grants, tuition fees under policy, sponsored research (universities only), ancillary services and earned capital contributions as a percentage of Advanced Education and Career Development grants.

Points:		1	3	4	5
Benchmarks:	Urban	20%	35%	50%	
	Rural	10%	25%	40%	

cost of specificity. Scores are additive (i.e., represent the weighted sum of the individual Benchmarks determined at the program level).

The learning component's five indicators are broken down into three categories based upon *New direction's* key goals of responsiveness, accessibility and affordability (AECD, 1994). Institutional *responsiveness* to the needs of learners and to provincial social, economic and cultural needs is assessed by examining the employment rates of graduates and graduates' satisfaction with the quality of their educational experience. Institutional progress towards higher levels of *accessibility* (i.e., increasing the number of student spaces) is indicated by examining changes in full-load equivalent (FLE) enrollment based upon a three-year rolling average. This indicator is adjusted for institutional location and recognizes that urban institutions have historically been better able to maintain stable enrollments because of a larger population base (AECD, 1996d). Institutions' success at maintaining *affordability* (i.e., providing quality learning opportunities to the greatest number of Albertans at a reasonable cost to the learner and taxpayer) is indicated by examining administrative expenditures and outside revenue generation.

Table 6.2 Research component indicators

Council monetary awards: National peer group rank in terms of council awards per full-time faculty member.

Points for achievement:	0	17	25
Points for improvement:	0	10	15
Benchmarks:	Bottom third	Second third	Top third

Citation impact: National peer group rank in terms of number of citations per research publication.

Points for achievement:	0	17	25
Points for improvement:	0	10	15
Benchmarks:	Bottom third	Second third	Top third

Community and industry support: National peer group rank in terms of community and industrial funding for sponsored research per full-time faculty member.

Points :	0	17	25
Benchmarks:	Bottom third	Second third	Top third

Research enterprise: National peer group rank in terms of sponsored research revenues as a percent of AECD grants.

Points :	0	3	5
Benchmarks:	Bottom third	Second third	Top third

The research component has four indicators (AECD, 1997b). Council success rates identifies national granting council awards (MRC, NSERC and SSHRC) per full-time faculty member. This is done for peer institutions across Canada. Citation impact is the expressed ratio of citations to published papers. The Institute for Scientific Information produces a database of summary publications and citation statistics that reflect research performance in the sciences and social sciences for Canadian universities. This database includes citations for 6000 peer-reviewed journals. Community- and industry-sponsored research per full-time faculty member is derived from Statistics Canada and the Canadian Association for University Business Officers data. Research enterprise is the total sponsored research revenues generated and is expressed a proportion of the government grant. This indicator is meant to capture the degree of "leverage" an institution has established through its operations grant by raising research funding.

During the two-year pilot, $15 million was allocated annually from the Performance Envelope. In 1997, this money was distributed in two ways. First, each institutions received a system-wide award of 1% of its operating grants to reward system-wide improvements in productivity. From this 1%, 0.5% was clawed back to partially finance the Performance Envelope. Second, institutions were awarded based upon their performance: 8 (of 21) institutions received an additional award of 1.5% based upon their performance, 9 institutions received an additional .75% and 4 institutions received no performance-based funding (AECD, 1997d). The percent of operating grants received as a performance award in 1998 decreased slightly to 1.26% and 0.63%) because, while institutions' performance improved, the total funding for performance awards available remained fixed at $15 million (AECD, 1998b). These awards accumulate over time (i.e., are added to institutions' revenues the next year) although they remain as part of the funding envelope line item in the provincial budget (Treasury, 1998).

6. Criticisms of performance-based funding in Alberta

Although the actual amount of funding distributed through the Performance Envelope is small, this envelope has some significant implications. Section 6.1 outlines some criticisms of the PIs used. Section 6.2 then describes some of the implications of the PBFM. Section 6.3 speculates as to the future of Alberta's performance indicator-based accountability and funding mechanism.

6.1 Criticisms

A number of technical criticisms can be directed at the specific indicators used in Alberta's performance-based funding mechanism. This section draws heavily from Barnetson (1999b).

Accessibility indicator— The Credit FLE indicator was a near perfect predictor of overall performance on the learning component for community colleges, universities and technical institutes in 1997 and 1998 thus disproportionately influenced overall institutional performance (AECD, 1997d, 1998b). Based on these results, institutions wishing to receive the maximum performance award must annually increase their

enrollments by more than 4%. These enrollment increases compound over time in a manner similar to interest and enrollment grows at a faster pace than the 1-2.5% of operating grants awarded as performance funding that the accompanies the additional students (Barnetson, 1997a). This deficiency may be offset by additional funding from a separate funding envelope focusing on increasing the number of student spaces, but the overall decline in per-student funding is consistent with the government's commitment to increasing institutional productivity (Duncan, 1997). By increasingly off-loading the cost of carrying additional students onto institutions, the PBFM encourages institutions to decrease their enrollments by relatively better rewarding a decrease. This suggests that the PBFM's reward structure will not accomplish the government's goal of increasing the number of student spaces available. This will be mitigated by the Access Fund (a funding envelope used by government to expand specific programs). In combination, the Access Fund and the PBFM actually increase the government's leverage: there is no incentives for institutions to expand any programs except those which receive Access Funding. To date, the Access Fund has focused on creating or expanding labour-market focused programs.

A related criticism is the disagreement within the system about the goal of the indicator; Ewell and Jones (1994) note the importance of clear and mutually agreed upon benchmarks of progress. There remains significant resistance to increasing enrollments at less than full funding among faculty. The resultant increase in faculty-to-student ratios (exacerbating existing shifts in instructional and evaluation practices) are generally viewed as negative developments by those who implement and are affected by policy at the institutional level (CAFA, 1997; ACIFA, 1997; ACTISEC, 1997).

Finally, using the same indicator for all institutions (which vary from a research-intensive university with a medical school to a series of small agricultural colleges) may be problematic. While there is recognition of the impact of geographic location, there is no consideration of the impact of program types. Programs are differentially expensive to expand based upon their infrastructure requirements. Adding five sections of introductory English composition (assuming adequate lecture space) comes at the cost of an additional instructor and perhaps some library resources. Adding five sections of introductory animal husbandry requires an instructor, additional animals and appropriate infrastructure and support for them. Other infrastructure-intensive programs such as technical programs are similarly handicapped. The indicator will advantage institutions offering less-expensive programs .

Responsiveness indicators—While the PBFM is supposed to encourage responsiveness in post-secondary institutions to the needs of individual learners and the social, cultural and economic needs of the province, the mechanism disregards the social and cultural needs by noting that "...while important, (they) have not been clearly articulated" (AECD, 1996b, p. 6). This is a significant omission and may reflect the inability of quantitative PIs to fully engage the concept of educational quality (Schmitz, 1993).

The employment-rate indicator assumes a causal relationship between institutional activity and graduate employment. This relationship is undoubtedly confounded by both the general level of employment (which fluctuates significantly as a result of Alberta's resource-based economy) and the attributes/activities of the graduates—both factors that institutions have little or no control over (Carter, 1989). In the longer term, institutions can control these factors by closing programs with unstable enrollments. This in a politically unsaleable option in Alberta because of a strong tradition and expectation that many programs will be available in every region of the province.

From a technical perspective, the indicator—which combines students employed in (1) directly related, (2) somewhat related and (3) unrelated jobs into a single number (AECD, 1996a)—fails to suggest and reward (and therefore enabling and motivating) corrective action. For example, technical-institute graduates are trained to perform particular jobs. The PBFM fails to differentiate between technical-focused institutions with high levels of employment in related fields (presumably due to appropriate training) and institutions with high levels of employment in unrelated fields (presumably due to inappropriate training combined with a shortage of general laborers) by aggregating all types of employment into a single number. At universities and colleges, the applicability of aggregated employment levels becomes more complex. The assessment of professional programs (e.g., engineering, law, commerce, etc.) is impacted in a manner similar to technical programs. A disaggregated indicator, however, would unfairly penalize liberal-arts programs, because they develop general skills that are applicable in a variety of situations. Whether a history graduate is employed doing (directly related) historical research or (unrelated) public relations is irrelevant: both positions were achieved based on superior research, analytical and writing skills. This suggests the development of system-wide PIs has, in this case, led to a conceptually inadequate measure. The oversimplification of desirable outcomes is necessitated by the government's desire to tie funding to performance, which requires common performance measures—regardless of whether or not the measures are appropriate for all programs.

Of further concern is the assumption of scale linearity. Institutions increasing their employment rates from 65% to 75% are rewarded with an additional 10 points—the same reward institutions receive for increasing employment rates from 85% to 95%. Obviously, the latter accomplishment is much more difficult (although, as argued above, likely outside of institutional control) but the additional points garnered are the same.

Examining Alberta's economy suggests that some areas may experience a negative correlation between employment rates of graduates and the enrollment levels that drive the accessibility indicator. Areas with strong ties to the resource industry tend to experience a boom-and-bust cycle. During boom periods, employment rates of graduates may be close to 100% but attracting students is extremely difficult. The reverse is true during bust periods when the unemployed return to school to develop their skills for the next

boom period. It seems unfair to structure a mechanism such that some institutions will find it difficult to score well on both of these indicators at once for entirely exogenous reasons.

The graduate-satisfaction indicator also faces difficulties. Respondents asked their degree of overall satisfaction with their program have three choices: (1) fully satisfied, (2) somewhat satisfied, and (3) unsatisfied (AECD, 1996a). The satisfaction rating is the combined totals of (1) and (2). The results of this indicator are biased towards a favorable result by the construction of the scale: two of three choices (including the midpoint) are consider indicative of satisfaction. 'Somewhat satisfied,' logically, also indicates some dissatisfaction and combining it with 'fully satisfied' is misleading.

Further, only graduates are surveyed, thereby excluding the portion of each entering class that fail to complete a program. This may result in sources of dissatisfaction going undetected because the root issue may serve to cull those affected prior to graduation. For example, programs that admit academically or socially unprepared students (who subsequently leave prior to completion) are failing to provide adequate levels of support to place-bound learners whose ability to seek educational opportunities elsewhere is often limited. The solution isn't to compensate for this inadequacy by including an indicator measuring graduation rates (which itself is subject to a host of criticism (Cave et al., 1997)) but rather to design an indicator or process that determines the cause(s) of attrition and suggest what (if any) corrective action is required. This recommendation assumes that educational policy is focused on maximizing access to programming rather than using post-secondary education as a mechanism to further sort people based upon previous social and/or educational status.

The simple market model of satisfaction assumed by the PBFM is inadequate because education is an experiential good that entails the alteration of the consumer's preferences during consumption (Cave et al., 1997). If a consumer's criteria for judging a program have not fully (re)formed by the time satisfaction data is collected, they may not be in a position to definitively judge the quality of their educational experience (March, 1976). The assumption that graduates can accurately infer causal relationships between educational experiences and outcomes is dubious. Measuring satisfaction "assumes a simple logic of experiential learning: an action is taken; there is some response from the environment; there is some interpretation and evaluation of that response; and then a new action is taken reflecting the impact of the sequence" (March and Olsen, 1976, p. 56). If this cycle is broken (or if there is substantial interference such that the relationship between cause and effect is ambiguous) at any of the four steps, then the causal relationship that is inferred is to some degree deficient and the measure imperfect.

Affordability indicators—Both of the affordability indicators—enterprise revenue and administrative expenses—play a minor role the PBFM. Of note is the implicit focus on reducing the costs of post-secondary education borne by government and the exclusion of indicators that examine the affordability of

post-secondary education to students. If the indicators are designed to ensure institutions are providing quality learning opportunities to the greatest number of Albertans at a reasonable cost to learners and taxpayers, it would seem reasonable to expect some cost-effectiveness measures. There are no measures of the relationship between academic costs and quality learning opportunities.

6.2 Implications

While it is difficult to isolate the impact of performance-based funding from the broader impact of academic capitalism, extrapolating from Alberta's experience to date suggests PBFM has several implications:

1. *Declining autonomy*—The growing use of performance and incentive envelopes shifts decision making power away from institutional governors and give it government (which determines the structure of funding envelopes) and corporations (who choose to partner with institutions based upon expected profitability).
2. *Growing vocationalization*—The PIs in the PBFM along with the criteria used to allocate other envelope funding pressures institutions to develop programs based upon labour-market demand. This has significant implications for programs in low demand or whose demand is difficult to quantify.
3. *Value-for-money approach to quality*—Consistent with the focus on labour market outcomes is the notion of quality as the return on investment generated by programs. This ignores that higher education has two roles: social reproduction and social criticism. This also obscures the qualitative impact of attempting to annually increase efficiency, such as growing class sizes, decaying infrastructure and deteriorating working conditions for faculty

6.3 The future of performance-based funding in Alberta

As noted above, the 1999 budget noted that the government will cease funding the Performance Envelope in 2000/01 although the value of performance awards will increase to 3% of institution's operating budgets (AECD, 1999). This means that the amount clawed back from each institutions will increase and, in turn, this would have a significant and immediate affect on institutions (particularly rural colleges which are precluded from performing well because of the boom-and-bust economy). Whether this will be politically unsaleable to rural MLAs remains uncertain.

Also uncertain is the government's ability and desire to maintain the PBFM system. The government has had a great deal of difficulty gathering data on graduate employment and satisfaction rates (often using the same data for two or more years). Further, the government has had significant success at advancing its agenda (i.e., increasing efficiency and aligning institutional activities with the needs of the marketplace) through the use of incentive funding (i.e., funding envelopes). It may be that, ultimately, the accountability component of using PIs will be retained but the regulatory aspect will not.

7. Conclusion

Alberta's performance indicator-based accountability and funding mechanism is part of a broader policy agenda to cause and legitimate the introduction of academic capitalism. Academic capitalism is a response to the pressures of economic globalization and the rightist alliance. This agenda results in the alignment of higher education with the needs of the marketplace and reduces institutional autonomy. A number of criticisms of Alberta's performance indicators and performance-based funding mechanism are evident. Unknown is the long-term sustainability of Alberta's PBFM.

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